

X-Y-Z DRAWER ORGANIZER

Background of the Invention

The present invention relates to an adjustable organizer for filling a rectangular or non rectangular space and, more particular, to an adjustable drawer organizer that can be adjusted in two planar directions, that is, the X and Y directions and also expanded along the vertical direction, the Z direction.

There are many different types of organizers that are used in rectangular areas or enclosures, particularly drawers, and which serve to provide some semblance of order to the various contents placed within that area or enclosure.

Basically organizers are used in rectangular, confined spaces and such organizers are therefore adapted to fit into a space having opposite parallel sides. For purposes of the present invention, the rectangular spaces will be define as having a width direction and a length direction, and those directions are measured between the opposite, parallel sides since the intended site is, as described a rectangular space.

The actual direction or orientation of the length and width directions is not critical since the rectangular can, of course, be a square, and therefore the length and width directions can be applicable to any rectangular space, it only being of importance that the two directions be orthogonal to each other with respect to the rectangular space. These directions can also be defined as the X and Y directions and are measured along a normally planar surface.

With that background, it is known to have organizers having adjustable dimensions so as to fit within a particular space, such as a drawer. Since it

would not be practical to make commercially available an organizer that would be specifically dimensioned to fit within all of the various sized drawers or other rectangular spaces, the ability to alter the dimensions of the organizer is a desirable feature and allows the commercially sold organizer to be adjusted by the purchaser to fit into the various sizes of drawers or other rectangular spaces.

At the present, that expandable/contractible feature allows organizers to be expanded or contracted by the user along a dimension, be it the width or the length of the organizer, in order to fit the organizer snugly into the particular dimensioned drawer and not, therefore, slide within the drawer.

Accordingly, with currently available organizers, however, the difficulty is that they can expand or contract along only one dimension, that is, along either the width dimension or the length dimension but not both. While versatile to a degree, it would be advantageous to have an organizer that could be change dimensionally in both directions or along the length and width directions while still maintaining a bottom surface that is contiguous such that the bottom surface still covers the entire rectangular surface on which the organizer is utilized.

As a further advantageous feature, it would desirable to have an organizer that is not only adjustable along two directions, but also to have a continuous peripheral upraised exterior edge such that objects contained within the organizer are retained therein whether the organizer is located in a drawer or other rectangular surface.

As a still further feature, it would be desirable to have an organizer that can be expanded and contracted along two directions and be further expandable along the vertical direction, the Z direction, so that the organizers can be stacked together to further enhance and expand the object organizing and compartmentalizing with a limited rectangular space.

Summary of the Invention

Accordingly, the present invention relates to an organizer that can be used within a rectangular or non rectangular space, preferably a drawer, and where the organizer can be dimensionally adjusted in both the width direction and the height direction in order to comfortably and securely fit within and conform to that space. As such, one organizer can be commercially available and which can readily be adjusted to fit within, for example, a drawer so as to conform to both the length and width of that drawer while still maintaining a contiguous bottom of the organizer that lays flat atop of the planar surface of the drawer.

As will be seen, the present invention is generally described and referred to in its preferred mode, that of a drawer organizer, however, it is equally useful for other rectangular spaces where some organization or compartmentalizing of the objects within that rectangular space is desired.

With the present invention, therefore, there are a plurality of individual elements that are sized and shaped so as to cooperatively work together to allow the organizer to be adjustable along both the width dimension as well as the length dimension so as to fit fully along all of the four side edges against the inside wall of a drawer or other rectangular space.

In the preferred embodiment, there is a first element that has a bottom surface having dividers that extend upwardly from the bottom surface so as to form the compartments or sections in which the objects are placed in order to keep order and separation of those objects. The first element preferably has an upraised peripheral exterior edge to retain the objects within the first element.

There are also one or more second elements, that is, there may be a single second element or a pair of second elements. In either embodiment the second element(s) have a bottom surface that underlies the bottom surface of the first element and is slidingly engaged therewith so as to move in the length direction of the drawer or other rectangular space. In the preferred embodiment, the second element or elements have three sides having raised, peripheral exterior edges, the sides that do not underlie the bottom surface of the first element and a flat edge that does underlie that bottom surface.

There is also a third element that is slidingly nested with the first element and the second element and, in turn can be moved in the width direction of the drawer or rectangular space. The third element preferably has two edges that are formed as raised exterior edges and two flat edges.

Finally, there is a fourth element and again, is movable in the width direction and has a bottom surface that underlies the bottom surface of the first element and preferably has two raised outer edges and two flat edges. The third and fourth elements are both also movable with respect to each other in the length direction.

Accordingly, with the present invention, all of the bottom surfaces of the first through fourth elements form a contiguous bottom surface of the organizer laying atop of the drawer surface or other rectangular space and the overall organizer can be dimensionally adjusted in the length and the width directions while still retaining the contiguous bottom surface made up of the various combined bottom surfaces of the individual elements. In the preferred embodiment, the various raised exterior edges of the elements combine to form a continuous raised exterior edge of the organizer despite the desired changes to the length and/or width dimensions of the organizer.

As other features of the present organizer, there is a system of guide slots and guide ribs that interengage so that the respective raised exterior edges that are joined together can be joined by a releasable mechanism such that the user can adjust the dimensional relationship between the elements and yet the elements are then held in a fixed, but releasable engagement and the user can release that engagement easily to re-dimension the organizer, however, the organizer will not, on its own, inadvertently, change its dimensions. There may be serrated raised exterior edges used on some of the elements to bring about that releasable engagement.

As a still further feature, there can be an expansion in the vertical or Z direction by means of a post located at the corner of each of the organizers and which can receive a further organizer to be mounted atop of an organizer so that organizers can be stacked vertically to further compartmentalize the rectangular space.

These and other features and advantages of the present invention will become more readily apparent during the following detailed description taken in conjunction with the drawings herein.

Brief Description of the Drawings

FIG. 1 is a top perspective view of an organizer constructed in accordance with the present invention showing the individual elements separated from each other;

FIG. 2 is a top perspective view of the present organizer with one of the elements extended in the length direction;

Fig. 3 is a top perspective view of the present organizer with two additional elements extended in the width direction;

FIG. 4 is a top perspective view of the present organizer with one of the elements extended in the length direction and with the other two elements removed;

FIG. 5 is a top schematic view of the present organizer of the present invention with one of the elements moved in the length direction with the other two elements moved in both the length and width directions;

FIG. 6 is a top schematic view of a alternative embodiment of the present organizer with two elements moved in the length direction and two elements moved in both the length and width directions; and

FIG. 7 is a top perspective view of the present organizer with the elements removed but with two of the elements nested together to illustrate the nesting arrangement.

Detailed Description of the Invention

Referring now to Fig 1, there is shown a perspective view of the present invention and showing a rectangular surface 8 which is preferable the lower surface of a drawer but, as stated, may be one of a variety of other rectangular spaces where some semblance of organization or compartmentalization is desired for the objects to be placed in that drawer or other rectangular space.

As can be seen, the rectangular surface 8 has an upper, generally planar surface 10 and has a length dimension L and a width dimension W. As such, movement along that width dimension will be referred to as movement in the width direction and movement along the length dimension will be referred to as movement in the length direction.

Thus, in Fig. 1, there can be seen a organizer 12 that comprises a first element 14 having a bottom surface 16 and having a plurality of upwardly raised dividers 18 that are used to separate the objects placed on the bottom surface 16 of the first element in organizing the contents of, for example, a drawer. Obviously, the number and location of any of the raised dividers 18 is a matter of design choice depending upon the characteristics of the objects to be placed thereon and may, therefore, form any variety of subdivided spaces or areas on the bottom surface 16.

As also can be seen, the first element 14 preferably has outer peripheral raised edges of which, there are two raised exterior edges 20 and 22 and two raised interior edges 24, 26. As such the combination of raised, exterior edges 20, 22 and raised interior edges 24, 26 complete the continuous peripheral edge surrounding the perimeter of the first element 14. The height of the raised edges may vary depending upon the objects to be placed in the first element 14 but can be about the same height or slightly higher than the raised dividers 18.

There is also a second element 28 shown in Fig. 1 and which also has a bottom surface 30 and three raised edges, that is, raised edges seen as exterior edge 32, exterior edge 34 and interior edge 36. The fourth edge is a flat edge 38 that is in the plane of the bottom surface 30 and, as can be seen, is adapted to be slidably nested with the first element 14 by positioning the flat edge 38 underneath the interior edge 24 of the first element 14. Thus, the second element 28 can be moved toward and away from the first element 14 in the length direction to vary the overall length of the organizer 12 in order to fit within the particular length of a drawer or other rectangular space where the organizer 12 is being used.

As is also clear, the bottom surface 16 of the first element 12 and the bottom surface 30 of the second element 28 are contiguous, that is, the combined bottom surfaces 30, 28 form a common bottom surface of the organizer 12 to fully cover the rectangular surface 10. Thus, even though the second element 28 can be moved in the length direction with respect to the first element 14 to alter the length dimension of the organizer 12, the bottom of the organizer 12 remains intact by the combined bottom surfaces 30, 28.

A third element 42 is also provided having a bottom surface 42 and having two raised edges, that is, exterior edges 44 and 46 and two flat edges, shown as flat edges 48, 50. The flat edge 48, as can be seen, is adapted to underlie the first element 14 and the second element 28 so as to be movable in the width direction to alter the width dimension of the organizer 12. Again, the bottom surface 42 of the third element 40 thereby cooperates and nests with the bottom surfaces 16 and 30, respectively, of the first and second elements 14, 28 to maintain a complete and contiguous bottom surface of the organizer 14.

Finally, with this embodiment, there is a fourth element 52 having a bottom surface 54 and having raised exterior edges 56, 58 and flat edges 60, 62. As such the flat edge 60 is adapted to underlie and nest with the first element 14 so as to form a combined and contiguous bottom surface by the combined bottom surface 16 of the first element and the bottom surface 54 of the fourth element 52.

The flat edge 62 of the fourth element 52 also nests with the flat surface 50 of the third element 40 and may overlie or underlie in that nesting relationship. In any event, the fourth element 52 is movable in the width direction to vary the width dimension of the organizer 12 and that width movement is undertaken in cooperation with the third element 40 to coordinate those movement such that both the third element 40 and the fourth element 52 act together when moving in the width direction to make sure the raised exterior edges 46 and 56 are together and form a straight, raised exterior edge of the organizer 12.

Additionally, the third element 40 and the fourth element 52 can move in the length direction with respect to each other so as to remain aligned with the first and second elements 14, 28 when those elements are moved to vary the length dimension.

As can now be seen, by moving the various elements in the width direction and the length direction, the overall dimensions of the organizer 12 can be changed to suit and conform to the dimensions of the particular drawer or rectangular space. As such, the first, second, third and fourth elements 14, 28, 40 and 52 can be individually manipulated and yet the respective bottom surfaces 16, 30, 42 and 54 remain in a contiguous relationship to fully cover the upper surface 10 of the drawer or rectangular space. As well, and as will later be further seen, the dimensional changes of the organizer 12 brought about by

the movement of the aforementioned elements still results in a continuous outer raised edge of the organizer 12 by means of the combined raised outer edges 20, 22, 34, 44, 46, 56 and 58.

Turning now to Fig. 2, there is shown a top perspective view of the organizer 12 and showing the second element 28 that has been moved to its extended position where the organizer 12 reaches the maximum length dimension since the second element 12 has been move along the length direction to the position in Fig. 2. As can be seen, the bottom surface 30 of the second element is still contiguous with the bottom surface 16 of the first element 14 and the peripheral, raised exterior edge of the organizer 12 is continuous and is made up of the various raised exterior edges 20, 22, of the first element 14, raised exterior edges 32 and 34 of the second element and raised exterior edges 44 and 46 of the third element and, finally, raised exterior edges 56 and 58 of the fourth element. It should be noted that the raised exterior edges 44, 46 of the third element 40 and the raised external edges 56 and 58 of the fourth element 52 are basically abutting against certain of the raised exterior edges of the third and fourth elements 40, 52 since the third and fourth elements 40, 52 are in the fully retracted positions and are not extended in the width direction.

Taking Fig. 3, there is a top perspective view of the present organizer 12 in its fully extended position, that is, the second element 28 has been moved along the length direction to its extended position providing the maximum length dimension and the third and fourth elements 40, 52 have been moved in the width direction to their maximum extension and therefore the maximum width direction. The third and fourth elements 40, 52 have also been moved in the length direction with respect to each other to match the length of the combined first and second elements 14, 28 so that the overall outer perimeter of the organizer 12 is a rectangle still bounded by a continuous raised exterior edge and forming a contiguous bottom surface.

Turning now to Fig. 4, there is shown a top, perspective view of the organizer 12 of the present invention and illustrating the third and fourth elements 40, 52 separated from the first and second elements 14, 28 for purposes of viewing the construction of the organizer 12. As such, in this Fig., the second element 28 is at its extend position providing the full length dimension of the organizer 12 and, as can be seen, the third and fourth elements 40, 52 are separated for illustrative purposes but would normally be nested with each other in an overlapping relationship so as to be movable in both the width direction together and moved relative to each other in the length direction.

In Fig. 5 the organizer is shown taking up the minimum area, since, the second, third and fourth elements 28, 40 and 52 are all in their fully retracted positions and thus the overall area of the organizer 12 is basically the area of the first element 14. Again the raised exterior edge is present surrounding the organizer 12.

Turning now to Fig. 6, there is shown a top schematic view of the organizer 12 of the present invention and used to illustrate the directions of movement of the various elements of the organizer 12. As can be seen, therefore, the first and second elements 14, 28 can be moved in the length direction, shown by the arrows A to increase and decrease the length dimension of the organizer 12. Both of the third and fourth elements 40 and 52 can be moved in the width direction with respect to the first and second elements 14, 28 as shown by the arrows B to increase and decrease the width dimension of the organizer 12 and, lastly, the third and fourth elements 40, 52 can also be moved in the length direction, shown by the arrows C so as to increase or decrease the length dimension of the combined third and fourth elements 40, 52 to match the length dimension of the first and second elements 14, 28 to make the overall organizer 12 a rectangular configuration .

Turning now to Fig. 7, there is shown a top schematic view of an alternative embodiment of the present invention and where five elements are present instead of the four element organizer 12 of the prior embodiment. In this embodiment, there is a first second element 64 and a second second element 66 and both of those elements are nested with the first element 14 and both of the first and second second elements 64, 66 move in the length direction in a similar manner to the second element 28 of Figs 1-6.

As such, in this embodiment, instead of only one second element, as with the prior embodiment, there are two second elements 64, 66 that move in the length direction and therefore an additional element is utilized in carrying out the purposes of the present invention. The third and fourth elements 40, 52 operate in the same manner as with the prior embodiment and, again the area of the organizer 12 can be expanded or contracted in both the length direction and the width direction while maintaining a contiguous bottom surface and a peripheral raised exterior edge.

Turning now to Fig. 8, there is shown a top perspective view of an organizer 12 of the present invention and showing the first and second elements 14, 28 separated and also showing the third and fourth elements 40, 52 nested in their sliding relationship to each other.

In the preferred embodiment, the raised exterior edges of the overlapping exterior edges, where applicable, can have a releasable engagement system and can be comprised of guide slots that engage and capture guide ribs formed on the adjacent raised external edge so that the two raised exterior edges slide together in an interlocking fashion with respect to each other. As a part of the interlocking or releasable engagement system, one of the raised exterior edges may have serrated teeth so that overall, the organizer will be incrementally rigid with respect to the interlocking elements.

As a further feature, there may be posts mounted on each corner of the organizer 12 so as to receive and hold another organizer in a vertical relationship therewith, such that the organizers can be stacked vertically, along the Z direction, to further increase the capacity of the compartmental organizers of a drawer or other rectangular space.

Those skilled in the art will readily recognize numerous adaptations and modifications which can be made to the multi-directional organizer of the present invention which will result in an improved process and device, yet all of which will fall within the scope and spirit of the present invention as defined in the following claims. Accordingly, the invention is to be limited only by the following claims and their equivalents.